

Title (en)
Laser diode and process for producing the same.

Title (de)
Laserdiode und Herstellungsverfahren.

Title (fr)
Laser à diode et méthode de fabrication.

Publication
EP 0616399 A1 19940921 (EN)

Application
EP 94301818 A 19940315

Priority
JP 5569293 A 19930316

Abstract (en)
A laser diode comprising: a Group III-V compound single-crystal substrate of first conduction type; a first cladding layer of first conduction type composed of $(\text{Al}_m\text{Ga}_{1-m})\text{nIn}_1\text{-nP}$ ($0.3 \leq m \leq 1$ and $0.3 \leq n \leq 0.75$) formed on said single-crystal substrate; an active layer composed of $(\text{Al}_x\text{Ga}_{1-x})\text{yIn}_1\text{-yP}$ ($0 \leq x \leq 0.5$ and $0.3 \leq y \leq 0.75$) formed on said first cladding layer; a second cladding layer of second conduction type composed of $(\text{Al}_m\text{Ga}_{1-m})\text{nIn}_1\text{-nP}$ ($0.3 \leq m \leq 1$ and $0.3 \leq n \leq 0.75$) formed on said active layer and having a ridge; and a current blocking layer composed of $\text{AluGa}_{1-u}\text{AsvP}_{1-v}$, ($0 \leq u \leq 1$ and $0 \leq v \leq 1$) contacting the lateral side of the ridge of said second cladding layer, wherein: (1) the refractive indices of the first and second cladding layers are each less than that of the active layer, and (2) the refractive index of the current blocking layer is less than that of the second cladding layer. During the growth of the current blocking layer using a vapor-epitaxy method, a small amount of HCl is added to reduce growth on the mask. <IMAGE>

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H01S 3/19

IPC 8 full level
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CPC (source: EP US)
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